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Institutional Feeding Managers Stewards-Chefs-Cooks

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COOKING VEGETABLES TO CONSERVE FOOD VALUES

Vegetables Are Plentiful

There has been so much concern recently over foods that are in short supply that little attention has been paid to the many foods that are available. For instance, fresh vegetables will be in abundant supply for the balance of 1945. The vegetable crop in 1944 was a record one and this year's production is expected to top even that record. During the month of June, cabbage, carrots, new potatoes, onions and tomatoes are expected to be plentiful in national supply. Many other fresh vegetables also will be available in local areas.

Industrial feeding managers should watch for seasonable vegetables that are plentiful, and use them often while they are available and when the best values in quality and price can be obtained.

Cooking Vegetables Properly -

At this time when some of the popular foods are scarce, it is important to utilize the available foods to the best advantage. It is not enough for the food manager merely to include plentiful foods on the menu to "sell" them to the workers. In order to have sales appeal, fresh vegetables, for example, must be prepared so that they will look attractive and taste good.

It is fortunate that the methods of cooking vegetables that best preserve their natural color and fine flavor also tend to conserve a larger amount of their nutritive value than do the less satisfactory methods. Overcooking and long standing after cooking not only change vegetable colors from fresh greens and clear yellows to olive drab and grayed yellow tones, but at the same time destroy much of the nutritive value of the vegetables.

Research in the Quantity Cooking of Vegetables -

During the last few years the effects of cooking vegetables in quantity by various methods on the retention of nutritive values has been studied. The interest of the Army and Navy in findings of this kind, as they affect the nutrition of men and women in the Armed Services, has stimulated much of this research.

Vegetables contain varying amounts of nutrients depending on the variety, stage of maturity and ways in which they have been stored and shipped. Green and yellow vegetables supply vitamin A and some also supply vitamin C and vitamin B1. Tomatoes are a good source of both vitamins A and C. Potatoes, because of the

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relatively large quantities eaten by most workers, are a fairly good source of vitamin C and of iron. Most of the research on vegetables cooked in quantity has been to determine the effect on the retention of vitamin A, B₁, and C. Although all the results have not been conclusive, and more experimental work needs to be done, the studies indicate the trend of procedures in cooking and handling vegetables to be followed in industrial feeding. Some of the findings in which industrial feeding managers will be interested are:

1. Minimize Vitamin and Mineral Losses. Cooking always causes some loss in the nutritive value of vegetables. The causes for these losses are exposure to heat, water, and air. Methods of large quantity vegetable cookery that reduce exposure to these factors to a minimum are steam cooking and boiling in a steam-jacketed kettle.
2. Bring Vegetables Quickly to the Boiling Point. Another reason for cooking vegetables in a steam-jacketed kettle, instead of on top of the stove, is that the retention of vitamin C is greater when the time it takes the food to heat through and begin to cook is short. Large quantities of vegetables placed in boiling water lower the temperature of the water. The time required to bring the water back to the boiling point is shorter when a steam-jacketed kettle is used.
3. Cook Vegetables a Short Time to Retain Nutritive Values. Not only the temperature, but the length of time that vegetables are cooked affects the amount of nutrients that are lost. Fast cooking for a short time results in a smaller loss in food value than that resulting from slower cooking. Vegetables steamed for a short time in a compartment pressure steamer retain more nutritive value than those cooked a longer time in boiling water. The high temperature in the pressure steamer may be destructive to the vitamin content of vegetables if they are overcooked; therefore, the time schedule should be watched carefully so that the vegetables are cooked in the shortest time possible to make them tender.
4. Use as Little Boiling Water as Possible When Cooking Vegetables. Food losses are increased when vegetables are cooked in excessively large amounts of water because the nutrients dissolve out in the water. When vegetables are cooked in a steam-jacketed kettle just enough boiling water should be used to prevent the vegetables from sticking and to bubble up through the mass.
5. Do not Cook Vegetables at a "Gallop" Boil or Stir Them Unnecessarily. Keep the water in which vegetables are cooked boiling gently, but do not let the water boil so hard that the vegetables are broken, for this increases the vitamin and mineral losses. Stirring vegetables while they are cooking increases the exposure to air and therefore the vitamin C loss, and should be avoided.
6. Cook Vegetables Whole or in Large Pieces to Conserve Their Nutritive Value. Less of the nutrients is destroyed by exposure to air and water when the vegetables are cooked whole or in large pieces. Young, tender vegetables should be cooked whole, and older ones should be cut in halves, quarters, or strips rather than in smaller pieces.
7. Cook Vegetables Immediately Before They Are Served. Holding Vegetables in either a bain marie or steam table after they are cooked, or even letting them stand at room temperature increases the loss of vitamin. Long holding periods are especially harmful. Vegetables should be cooked as short a time as possible before they are served. The rules for cooking vegetables given below are based on the experimental studies on vegetable cookery. If they are followed in your plant, vegetables should be better cooked and have higher nutritive value. Try posting these rules for the guidance of the vegetable cooks. (See pp.5 and 6)

Menus for Special Lunches

1. . .

Hamburg cake
Creamed new potatoes
Tomato salad with green onions
Enriched roll with butter or fortified margarine
Butterscotch Pudding
Beverage

2.

Vegetable Plate:
Baked corn pudding
Buttered green beans
Cabbage and carrot salad
Whole-wheat bread w. butter or Fortified Margarine
Blackberry Pie
Milk

3.

Stuffed Shoulder of Lamb
Parsleyed Potatoes
New Beets and Greens
Enriched Bread with Butter or fortified Margarine
Fruit Gelatin
Beverage

4.

Boston Style Baked Beans w. Salt Pork
Fresh buttered broccoli
Sliced Tomato and Lettuce Salad
Brown bread with butter or Fortified Margarine
Cottage Pudding with Fruit Sauce
Milk

5.

Fried Fish with Lemon
Scalloped Potatoes
Fresh Asparagus
Whole-wheat Bread with Butter or fortified Margarine
Pink rhubarb sauce
Oatmeal Cookie
Beverage

6.

Boiled tongue with horseradish sauce
Mashed Potatoes
Fresh Spinach
Enriched Roll with Butter or Fortified Margarine
Strawberry Shortcake
Milk

7.

Chicken Pie (with Celery and Peas)
Parsleyed Potatoes
Tossed Vegetable Salad
Enriched Rolls with Butter or Fortified Margarine
Fruit Cup
Milk

8.

Cheese omelet
Steamed new Potatoes in Jackets
Mixed Green Salad w. Sliced Tomatoes
Enriched Bread w. Butter or Fortified Margarine
Warm gingerbread
Milk

9.

Sausage Roll
Mashed Potatoes
Buttered Carrot Strips
Enriched Bread w. Butter or Fortified Margarine
Peach Cobbler
Milk

10.

Baked Lima Beans w. Bacon
Scalloped Tomatoes
Sliced Cucumber Salad
Whole-wheat Rolls w. Butter or Fortified Margarine
Baked Custard
Milk

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11.

Braised Liver
Creamed new Potatoes
New Cabbage
Whole-wheat Bread w. Butter or
Fortified Margarine
Applesauce Cake
Beverage

13.

Vegetable Plate:
Cottage Cheese and Endive Salad
Parsleyed-Buttered Carrots
Baked Potato
Sliced Tomato
Whole-wheat Bread w. Butter or Forti-
fied Margarine
Fresh Rhubarb Pie
Milk

12.

Fish Loaf with Tomato Sauce
Parsleyed New Potatoes
Cabbage and green pepper salad
Enriched Roll with Butter or
Fortified Margarine
Chocolate Nut Pudding
Beverage

14.

Steamed Frankfurter
Hot Potato Salad
Buttered Carrots
Whole-wheat Bread w. Butter or
Fortified Margarine
Jelly Roll w. Lemon Cream Filling
Milk

RULES FOR COOKING VEGETABLES

1. Steam tender vegetables, such as asparagus tips, broccoli, cabbage, and cauliflower, in shallow pans without water.
 2. Steam potatoes and root vegetables in perforated steamer pans.
 3. Boil leafy green vegetables, green peas, green beans, corn on the cob, and onions, in a steam-jacketed kettle using just enough salted water to bubble up through the vegetables.
 4. Cover vegetables while they are boiling.
 5. Do not stir vegetables unnecessarily while they are cooking.
 6. Whenever possible, cook vegetables whole, or as halves, quarters, or strips rather than thin slices, small dices, or fine shreds.
 7. Cook vegetables until just tender and serve them as quickly as possible.
 8. Cook vegetables on a staggered schedule and replenish the steam table supply every 15 or 20 minutes.
 9. Use the liquid in which vegetables have been cooked for soups, sauces, and gravies.
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Timetable for Cooking Vegetables

<u>Kind of Vegetable</u>	<u>Pre-Cooking Preparation</u>	<u>Method of Cooking</u>	<u>Time in Min.1/</u>
Asparagus	Tough stalk removed	Compartment steamer	8 to 10
Beans, lima	Shelled	Steam-jacketed kettle	30
Beans, snap	Whole or cut in 1½" lengths	" " "	20 to 30
Beets	Unpeeled	Compartment steamer	60 to 90
Beets	Peeled and Diced	Compartment steamer	8 to 10
Beet greens	Tough stems removed	Steam-jacketed kettle	8 to 10
Broccoli	Outer leaves removed, stems split	Compartment steamer	12 to 15
Brussels Sprouts	Trimmed	Compartment steamer	6 to 8
Cabbage	Cut into sections	Compartment steamer	8 to 10
Cabbage	Shredded	Compartment steamer	5 to 7
Carrots	Whole or cut in strips	Compartment steamer	15 to 20
Cauliflower	Broken into flowerets	Compartment steamer	5 to 8
Collard Greens	Stems removed	Steam-Jacketed kettle	20
Corn-on-the-cob	Shucks removed	Steam-jacketed kettle	8 to 10
Kale	Cut coarsely	Steam-jacketed kettle	15 to 20
Onions	Peeled, whole	Steam-jacketed kettle	15 to 20
Parsnips	Whole or half	Compartment steamer	20
Peas, green	Shelled	steam-jacketed kettle	10 to 15
Potatoes, Irish	Pared, whole, or in jackets	Compartment steamer	25 to 40
Potatoes, sweet	Whole	Compartment steamer	30 to 40
Rutabagas	Pared	Compartment steamer	30 to 40
Squash, summer	Cut into wedges	Compartment steamer	12 to 15
Squash, Hubbard	Cut into sections	Compartment steamer	20 to 30
Spinach	Coarse stems removed	Steam-jacketed kettle	5 to 8
Turnips	Diced	Compartment steamer	20 to 30
Turnip greens	Tough stems removed	Steam-jacketed kettle	10 to 20

1/ The range in time is given to provide for difference in variety and maturity of vegetables which may affect the length of the cooking period. The minimum time should be used wherever possible.

